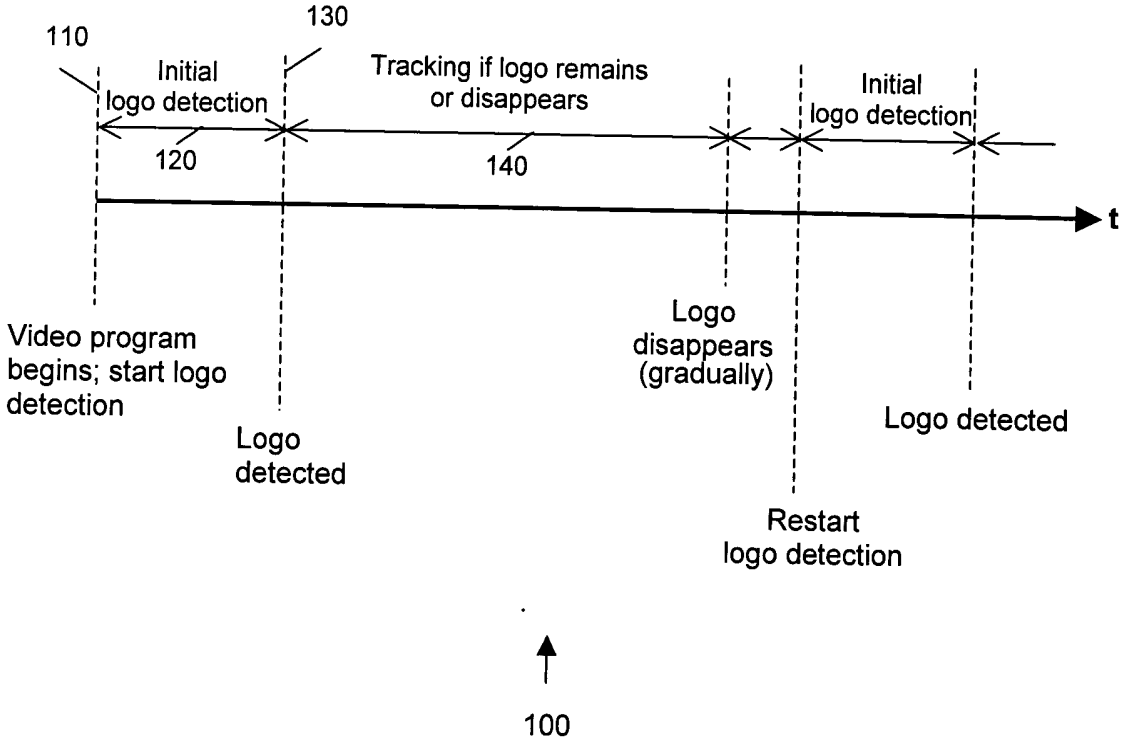
110
130
Initial
logo detection
Tracking if logo remains
or disappears
Initial
logo detection
120
140
t
Video program
begins; start logo
detection
Logo
detected
Logo
disappears
(gradually)
Logo detected
Restart
logo detection
100

FIG. 1

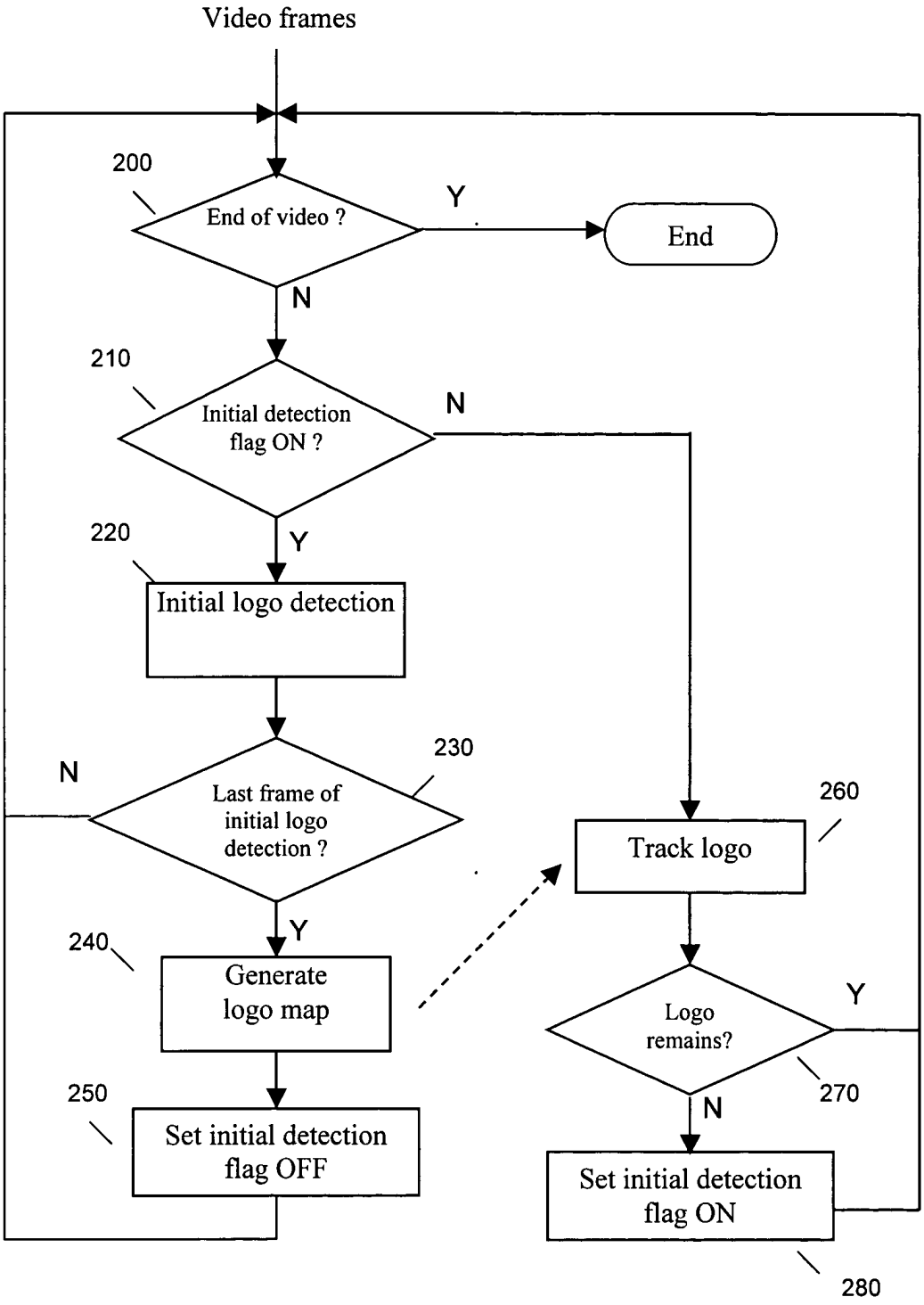
Video frames
200
End of video ?
Y
End
N
210
Initial detection flag ON ?
N
220
Y
Initial logo detection
230
N
Last frame of initial logo detection ?
260
Track logo
Y
240
Generate logo map
Logo remains?
Y
270
N
250
Set initial detection flag OFF
Set initial detection flag ON
280

FIG. 2

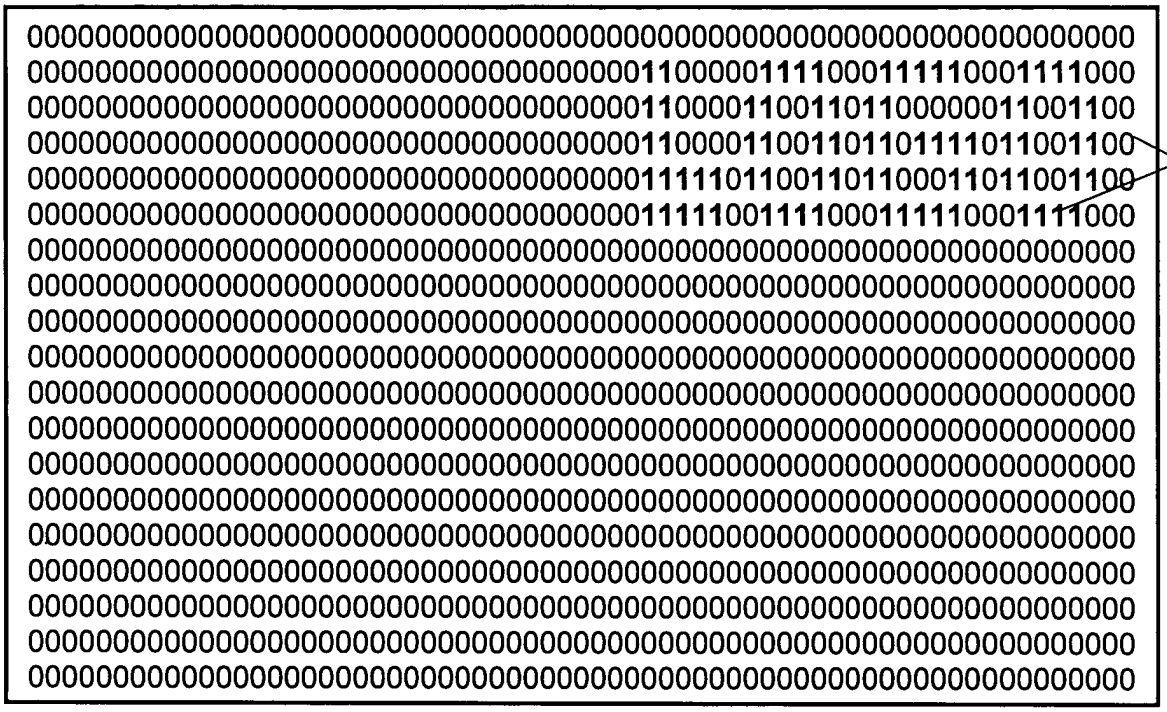

FIG. 3

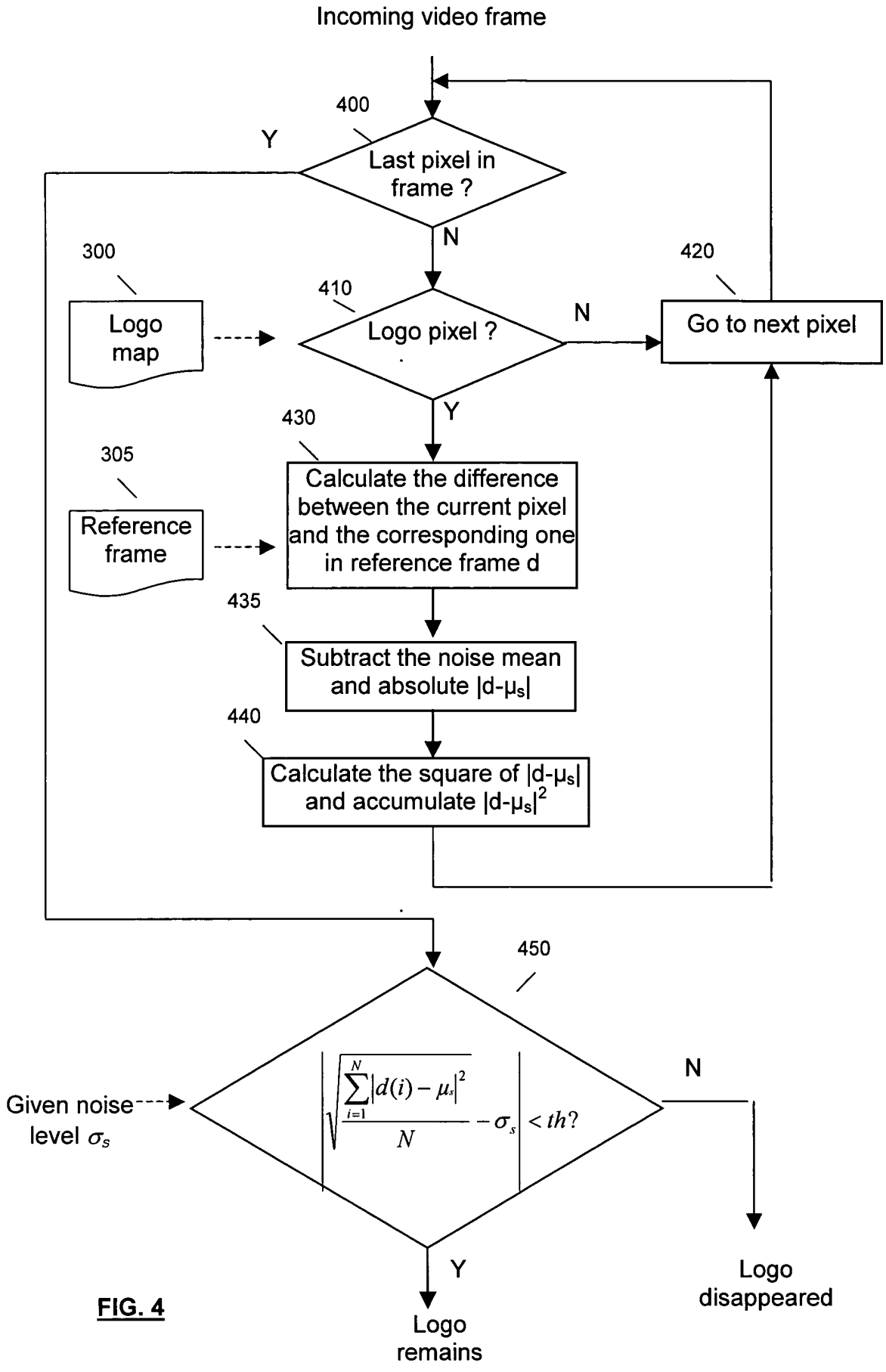
Incoming video frame
400
Last pixel in frame ?
Y
N
300
Logo map
410
Logo pixel ?
N
420
Go to next pixel
Y
430
Calculate the difference between the current pixel and the corresponding one in reference frame d
305
Reference frame
435
Subtract the noise mean and absolute |d-μs|
440
Calculate the square of |d-μs| and accumulate |d-μs|2
450
Given noise level σs
N
Y
Logo remains
Logo disappeared

FIG. 4

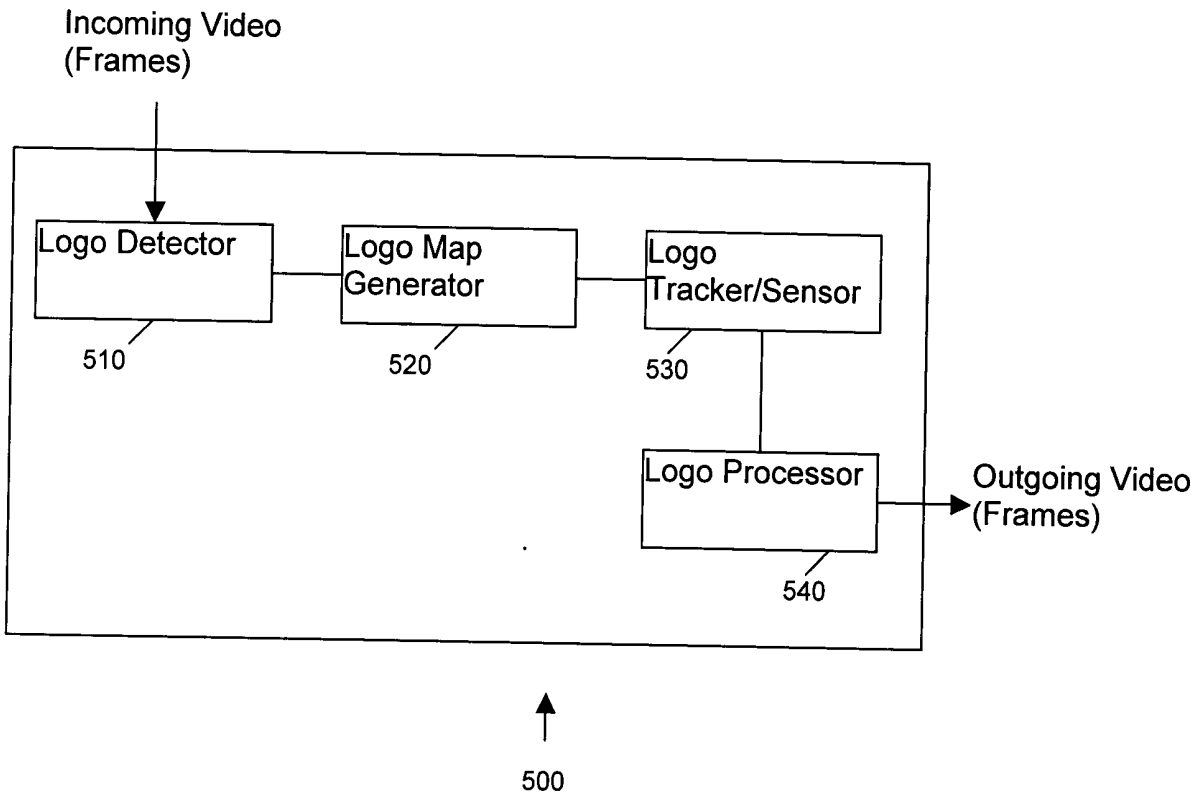
Incoming Video
(Frames)
Logo Detector
Logo Map
Generator
Logo
Tracker/Sensor
510
520
530
Logo Processor
Outgoing Video
(Frames)
540
500

FIG. 5